

pH Scale

Name: _____

1) What is the molarity of H^+ ions in an antacid solution that has $[\text{OH}^-] = 3.2 \times 10^{-4} \text{ M}$?

2) What is the $[\text{OH}^-]$ in Italian dressing if the acid concentration of H^+ is $6.5 \times 10^{-5} \text{ M}$?

3) Calculate the pH and pOH of the following solutions and state whether the solution is acidic, basic, or neutral:

a) $[\text{H}^+] = 3.6 \times 10^{-12} \text{ M}$

c) $[\text{H}^+] = 8.7 \times 10^{-6} \text{ M}$

b) $[\text{OH}^-] = 7.1 \times 10^{-3} \text{ M}$

d) $[\text{OH}^-] = 5.9 \times 10^{-8} \text{ M}$

4) Calculate the $[\text{H}^+]$ and $[\text{OH}^-]$ for the solutions whose pH OR pOH values given below:

a) pH = 13.2

b) pOH = 11.3

5) A solution is made by dissolving 3.00 g of NaOH in enough water to make a 250 mL solution. What is the pH of the solution?

6) What is the pH of a solution in which 19.6 g of hydrochloric acid is dissolved in 2.0 L of water.

Answers: 1) $3.1 \times 10^{-11} \text{ M}$ 3a) pH = 11.4, pOH = 2.6

4b) $[\text{H}^+] = 0.0020 \text{ M}$, $[\text{OH}^-] = 5.0 \times 10^{-12} \text{ M}$ 5) 13.5 6) 0.57

pH Scale

Name: _____

1) What is the molarity of H^+ ions in soda pop that has an $[\text{OH}^-] = 4.6 \times 10^{-5} \text{ M}$?

2) What is the $[\text{OH}^-]$ in bleach if the acid concentration of H^+ is $5.7 \times 10^{-11} \text{ M}$?

3) Calculate the pH and pOH of the following solutions and state whether the solution is acidic, basic, or neutral:

a) $[\text{H}^+] = 1.6 \times 10^{-8} \text{ M}$

c) $[\text{H}^+] = 2.7 \times 10^{-2} \text{ M}$

b) $[\text{OH}^-] = 4.9 \times 10^{-10} \text{ M}$

d) $[\text{OH}^-] = 9.1 \times 10^{-4} \text{ M}$

4) Calculate the $[\text{H}^+]$ and $[\text{OH}^-]$ for the solutions whose pH OR pOH values given below:

a) pH = 3.1

b) pOH = 4.8

5) When calcium hydroxide ($\text{Ca}(\text{OH})_2$) is dissolved in water, a saturated solution will contain 9.81 g of calcium hydroxide in 1000 mL of solution. What will be the pH of the solution? Remember, for every mole of $\text{Ca}(\text{OH})_2$, there is 2 moles of hydroxide dissolved.

6) How many grams of bromic acid needs to be dissolved in 300 mL of solution in order to make a 1.2 pH solution?

Answers: 1) $2.2 \times 10^{-10} \text{ M}$ 3a) pH = 7.8, pOH = 6.2 5) 13.4 6) 2.43 g

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